

01 SQ Listing- Oct 2004.ST25.txt
SEQUENCE LISTING

<110> Novozymes A/S
<120> metE gene-amplification
<130> 10442.204-wo
<160> 17
<170> PatentIn version 3.2
<210> 1
<211> 35
<212> DNA
<213> artificial sequence
<220>
<223> Primer P52
<400> 1
aataataaag atctggagga gaaacaatga caacc 35

<210> 2
<211> 33
<212> DNA
<213> artificial sequence
<220>
<223> Primer P53
<400> 2
aaataataag atctaaatta tactagctgt gtc 33

<210> 3
<211> 39
<212> DNA
<213> artificial sequence
<220>
<223> Primer P42
<400> 3
attttatagg atcccgctga ttcattttct tctgcgaac 39

<210> 4
<211> 48
<212> DNA
<213> artificial sequence
<220>
<223> Primer P43
<400> 4
gaattccatc gcactggacg acattttcag gtcgattctc ggaaatcc 48

<210> 5
<211> 50
<212> DNA
<213> artificial sequence
<220>
<223> Primer P44

01 SQ Listing- Oct 2004.ST25.txt

<400> 5
 cccgaggcct ttcaggcccg caaacaatat gggtgaagcc gcaaaacagg 50

<210> 6
 <211> 39
 <212> DNA
 <213> artificial sequence

<220>
 <223> Primer P45

<400> 6
 ataataatgg taccatattg atgtgacact tgaagttgc 39

<210> 7
 <211> 7311
 <212> DNA
 <213> artificial sequence

<220>
 <223> Plasmid pCLO43

<400> 7
 cttggagggc caagcgatgt gccagagcta aaagaagcag tgaaaaacgc agtgaaaaac 60
 ggagtgtctg tcgtttgtgc agcgggaaat gaagggtgacg gcgacgaacg cacagaagag 120
 ctttcctacc ccgcagctta taatgaagtg attgcagttg gatctgtttc tgtagcgcga 180
 gaattatcag aatttttctaa cgcgaataaa gagattgacc ttgtggcacc aggagaaaac 240
 atcttatcca cccttcccaa caagaagtac ggtaagctga ccggcacttc aatggctgcc 300
 cctcatgtca gcggtgcgct tgctttaatc aaaagctatg aagaagaatc atttcaaaga 360
 aagctttctg aatctgaggt tttcgcacag ctaatccgca ggacacttcc tcttgatatt 420
 gcaaaaacgc tggcaggcaa tggattcctg tatttaacag ctctgatga gctcgcagaa 480
 aaagcagagc aatcacattt gttgacccta taagattatt tttcttatat aatatacacc 540
 acatcatgta aataaaaatt tcaaattcta tgttgacaat gaatttgaat tactgttaag 600
 attaccaaca aatgattcaa cttttcaaaa aattaataac attttctctt atcgagagtt 660
 gggcgagggg ttggcctttt gaccccaaca gcaaccgacc gtaataccat tgtgaaatgg 720
 ggcgcactgc ttttcgcgcc gagactgatg tctcataagg cacggtgcta attccatcag 780
 attgtgtctg agagatgaga gaggcagtggt ttacgtaga aaagcctctt tctctcatgg 840
 gaaagaggct ttttgttgtg agaaaacctc ttagcagcct gtatccgcgg gtgaaagaga 900
 gtgtttttaca tataaaggag gagaaacaat gacaaccatc aaaacatcga atttaggatt 960
 tccgagaatc gacctgaaaa tgctgtccag tgcgatggaa ttctgatcaa atggttcagt 1020
 gagagcgaag cgaacacttg attttttaaat tttctatctt ttataggtca ttagagtata 1080
 cttatttgtc ctataaacta tttagcagca taatagattt attgaatagg tcatttaagt 1140
 tgagcatatt agaggaggaa aatcttggag aaatatgtga agaacccgaa cgcgtgagta 1200
 gttcaacaaa cgggccagtt tgttgaagat tagatgctat aattgttatt aaaaggattg 1260
 aaggatgctt aggaagacga gttattaata gctgaataag aacggtgctc tccaaatatt 1320

01 SQ Listing- Oct 2004.ST25.txt

cttattttaga	aaagcaaadc	taaaattatc	tgaaaagggg	atgagaatag	tgaatggacc	1380
aataataatg	actagagaag	aaagaatgaa	gattgttcat	gaaattaagg	aacgaatatt	1440
ggataaatat	ggggatgatg	ttaaggctat	tggtgtttat	ggctctcttg	gtcgtcagac	1500
tgatgggccc	tattcggata	ttgagatgat	gtgtgtcatg	tcaacagagg	aagcagagtt	1560
cagccatgaa	tggacaaccg	gtgagtggaa	ggtggaagtg	aatttttgata	gcgaagagat	1620
tctactagat	tatgcatctc	aggtggaatc	agattggccg	cttacacatg	gtcaattttt	1680
ctctattttg	ccgattttatg	attcagggtg	atacttagag	aaagtgtatc	aaactgctaa	1740
atcggtagaa	gcccacacgt	tcacagatgc	gatttgtgcc	cttatcgtag	aagagctggt	1800
tgaatatgca	ggcaaattggc	gtaatatctg	tgtgcaagga	ccgacaacat	ttctaccatc	1860
cttgactgta	caggtagcaa	tggcagggtg	catgttgatt	ggtctgcatc	atcgcatctg	1920
ttatacgacg	agcgcttcgg	tcttaactga	agcagttaag	caatcagatc	ttccttcagg	1980
ttatgaccat	ctgtgccagt	tcgtaatgtc	tggtcaactt	tccgactctg	agaaactttc	2040
ggaatcgcta	gagaattttc	ggaatgggat	tcaggagtgg	acagaacgac	acggatatat	2100
agtggatgtg	tcaaaacgca	taccattttg	aacgatgacc	tctaataatt	gttaatcatg	2160
ttggagctca	gtgagagcga	agcgaacact	tgatttttta	attttctatc	ttttataggt	2220
cattagagta	tacttatttg	tcctataaac	tatttagcag	cataatagat	ttattgaata	2280
ggtcatttaa	gttgagcata	ttagaggagg	aaaatccttg	agaaatattt	gaagaacccg	2340
aggcctttca	ggcccgcgaa	caatatgggt	gaagccgcaa	aacaggcaag	agcacagcag	2400
acacagctag	tataatttga	aaaaaccatc	tgcatctggc	agatggtttt	tttctataat	2460
acagccacaa	tcggttttct	atttagcaaa	tcccccaaat	actttgttta	ttttgcactt	2520
ttttaagaat	gttcttttgca	ttcttttcgg	ctataactaa	aacactctat	tgacaggagg	2580
gattgggatg	aatcatgaaa	cgttcttaaa	acgggctgtc	actctcgcat	gtgaaggagt	2640
gaatgcagga	atcggcgggc	cttttgagac	cgttatcgtg	aaagacggag	ccattattgc	2700
agagggacag	aacaacgtca	caacaagcaa	tgatccgact	gcccacgcgg	aagtcacagc	2760
tattcggaaa	gcctgtaagg	tgctaggagc	ctaccagctt	gatgactgca	ttttgtatac	2820
gagctgtgaa	ccatgcccaa	tgtgcttggg	cgccatctac	tgggcccggc	ctaaagccgt	2880
tttctatgca	gctgagcaca	cagacgctgc	cgaagccggg	tttgatgatt	cattcattta	2940
taaagaaatt	gataaacctg	ctgaagaaag	aacgatcccc	ttttatcaag	tgacactaac	3000
agagcattta	tccccgtttc	aagcatggcg	gaacttcgcc	aataagaaag	aatattaaaa	3060
ggatcaggca	tgcgcggcct	ggtccttggt	atttctccaa	gtagccgcta	tgccctgtgc	3120
aaatacaaaa	cagcatatac	gcgcaattca	gcacggcaga	caccgtgcca	gccacccgct	3180
tcatctgtaa	cttttggttt	aaaggcatgc	ttcaaacgct	tctctgaagt	tttatcataa	3240
atctgtgccc	gccccgcatg	tccgacacca	aaaaacatcc	tgagaatcct	caggatgccg	3300
gtcattattd	taattctagt	tttacatcaa	catttcctct	ggttgccttt	gagtaaggac	3360

01 SQ Listing- Oct 2004.ST25.txt

agaattcatg agcggcggtt acaagctctt gtgccttttc ccgatctaaa tctttcgtgt	3420
tcacaacaag tgtgacaccg attttaaacc cgccgtcgct ctcatccttc atgaggctga	3480
cctgcccttc aatctccgaa tcaatttcga tttctgtctc tttggctacg tggtcgagcg	3540
cgccgccgaa gcatgcagca taccctgccg caaagagctg ttccggattt gtgccggttt	3600
gtccttcttt tttggcattt ggcattgaca tatcaaaatc aagaacaccg tcatctgatg	3660
taatattgtc tgctcgtccg cctcgcgcggt ttacttttgc tgtaaatagt gccatatttc	3720
ccaacctcct tatttgatc tagttgttat atttcccttt ctgatctttt taaacatgct	3780
atgtttgccg agaataggaa aagtgaggtt tttcagatac aatagaatcg aatgacaaaa	3840
aagagttggt gaacaaaatg gaaaataaat ttgatcatat gcggtgtgaa ataccgcaca	3900
gatgcgtaag gagaaaatac cgcattcaggc gctcttccgc ttcctcgctc actgactcgc	3960
tgcgctcggg cggttcggctg cggcgagcgg tatcagctca ctcaaaggcg gtaatacggg	4020
tatccacaga atcaggggat aacgcaggaa agaacatgtg agcaaaaggc cagcaaaagg	4080
ccaggaaccg taaaaaggcc gcgttgctgg cgtttttcca taggctccgc cccctgacg	4140
agcatcacia aaatcgacgc tcaagtcaga ggtggcgaaa cccgacagga ctataaagat	4200
accaggcggt tccccctgga agctccctcg tgcgctctcc tggtccgacc ctgccgctta	4260
ccggatacct gtccgccttt ctcccttcgg gaagcgtggc gctttctcat agctcacgct	4320
gtaggtatct cagttcggtg taggtcggtc gctccaagct gggctgtgtg cacgaacccc	4380
ccgttcagcc cgaccgctgc gccttatccg gtaactatcg tcttgagtcc aaccggtaa	4440
gacacgactt atcgccactg gcagcagcca ctggtaacag gattagcaga gcgaggtatg	4500
taggcggtgc tacagagttc ttgaagtggg ggcctaacta cggctacact agaaggacag	4560
tatttggtat ctgcgctctg ctgaagccag ttaccttcgg aaaaagagtt ggtagctctt	4620
gatccggcaa acaaaccacc gctggtagcg gtggtttttt tgtttgcaag cagcagatta	4680
cgcgcagaaa aaaaggatct caagaagatc ctttgatctt ttctacgggg tctgacgctc	4740
agtggaacga aaactcacgt taagggtatt tggatcatg attatcaaaa aggatcttca	4800
cctagatcct tttaaattaa aaatgaagtt ttaaataaat cttaaagtata tatgagtaaa	4860
cttggtctga cagttaccaaa tgcttaataca gtgaggcacc tatctcagcg atctgtctat	4920
ttcggtcatc catagttgcc tgactccccg tcgtgtagat aactacgata cgggagggct	4980
taccatctgg cccagtgct gcaatgatac cgcgagaccc acgctcaccg gctccagatt	5040
tatcagcaat aaaccagcca gccggaaggg ccgagcgcag aagtggctct gcaactttat	5100
ccgcctccat ccagtctatt aattgttgcc ggaagctag agtaagtagt tcgccagtta	5160
atagtttgcg caacgttggt gccattgctg caggcatcgt ggtgtcacgc tcgtcgtttg	5220
gtatggcttc attcagctcc gggtcccaac gatcaaggcg agttacatga tccccatgt	5280
tgtgcaaaaa agcgggttagc tccttcgggc ctccgatcgt tgtcagaagt aagttggccg	5340
cagtgttatc actcatgggt atggcagcac tgcataattc tcttactgtc atgccatccg	5400

01 SQ Listing- Oct 2004.ST25.txt

taagatgctt	ttctgtgact	ggtgagtact	caaccaagtc	attctgagaa	tagtgtatgc	5460
ggcgaccgag	ttgctcttgc	ccggcgtcaa	cacgggataa	taccgcgcca	catagcagaa	5520
ctttaaaagt	gctcatcatt	ggaaaacggt	cttcggggcg	aaaactctca	aggatcttac	5580
cgctgttgag	atccagttcg	atgtaaccca	ctcgtgcacc	caactgatct	tcagcatctt	5640
ttactttcac	cagcgtttct	gggtgagcaa	aaacaggaag	gcaaaatgcc	gcaaaaaagg	5700
gaataagggc	gacacggaaa	tgttgaatac	tcatactctt	cctttttcaa	tattattgaa	5760
gcatttatca	gggttattgt	ctcatgagcg	gatacatatt	tgaatgtatt	tagaaaaata	5820
aacaaatagg	ggttccgcgc	acatttcccc	gaaaagtgcc	acctgacgtc	taagaaacca	5880
ttattatcat	gacattaacc	tataaaaata	ggcgtatcac	gaggcccttt	cgtcttcaag	5940
aatttctcatg	tttgacagct	tatcatcgat	aagctttaat	gcggtagttt	atcacagtta	6000
aattgctaac	gcagtcaggc	accgtgtatg	aaatctaaca	atgcgctcat	cgtcatcctc	6060
ggcaccgtca	ccctggatgc	tgtaggcata	ggcttgggta	tgccggtact	gccgggcctc	6120
ttgcgggata	tcgtccattc	cgacagcatc	gccagtcact	atggcgtgct	gctagcgcta	6180
tatgcgttga	tgcaatttct	atgcgcaccc	gttctcggag	cactgtccga	ccgctttggc	6240
cgccgcccag	tcctgctcgc	ttcgtacttt	ggagccacta	tcgactacgc	gatcatggcg	6300
accacacccg	tcctgtggat	cctctacgcc	ggacgcatcg	tggccggcat	caccggcgcc	6360
acaggtgcgg	ttgctggcgc	ctatatcgcc	gacatcaccc	atggggaaga	tcgggctcgc	6420
cacttcgggc	tcatgagcgc	ttgtttcggc	gtgggtatgg	tggcaggccc	cgtggccggg	6480
ggactgttgg	gcgccatctc	cttgcatgca	ccattccttg	cggcggcggg	gctcaacggc	6540
ctcaacctac	tactgggctg	cttcctaata	caggagtcgc	ataagggaga	gcgtcgaccg	6600
atgcccttga	gagccttcaa	cccagtcagc	tccttcgggt	gggcgcgggg	catgactatc	6660
gtcgccgcac	ttatgactgt	cttctttatc	atgcaactcg	taggacagggt	gccggcagcg	6720
ctctgggtca	ttttcggcga	ggaccgcttt	cgctggagcg	cgacgatgat	cggcctgtcg	6780
cttgcggtat	tcggaatctt	gcacgccctc	gctcaagcct	tcgtcactgg	tcccgccacc	6840
aaacgtttcg	gcgagaagca	ggccattatc	gccggcatgg	cggccgacgc	gctgggctac	6900
gtcttgctgg	cgttcgcgac	gcgaggctgg	atggccttcc	ccattatgat	tcttctcgct	6960
tccggcgcca	tcgggatgcc	cgcgttgag	gccatgctgt	ccaggcagggt	agatgacgac	7020
catcagggac	agcttcaagg	atcgctcgcg	gctcttacca	gcctaacttc	gatcactgga	7080
ccgctgatcg	tcacggcgat	ttatgccgcc	tcggcgagca	catggaacgg	gttggcatgg	7140
attgtaggcg	ccgccctata	ccttgctcgc	ctccccgcgt	tgcgtcgcgg	tgcatggagc	7200
cgggccacct	cgacctgaat	ggaagccggc	ggcacctcgc	taacggattc	accactccaa	7260
gaattggagc	caatcaattc	ttgcggagaa	ctgtgaatgc	gcaaaccaac	c	7311

<210> 8
 <211> 13129

01 SQ Listing- Oct 2004.ST25.txt

<212> DNA
<213> artificial sequence

<220>
<223> Plasmid pCLO1154

<220>
<221> misc_feature
<222> (5067)..(5067)
<223> n is a, c, g, or t

<400> 8
aacaaaattc tccagtcttc acatcggttt gaaaggagga agcggaagaa tgaagtaaga 60
gggatttttg actccgaagt aagtcttcaa aaaatcaaat aaggagtgtc aagaatgttt 120
gcaaaacgat tcaaaacctc ttactgccg ttattcgctg gatTTTTatt gctgtttcat 180
ttggttctgg caggaccggc ggctgcgagt gctgaaacgg cgaacaaatc gaatgagctt 240
acagcaccgt cgatcaaaag cggaaccatt cttcatgcat ggaattgggtc gttcaatacg 300
ttaaaacaca atatgaagga tattcatgat gcaggatata cagccattca gacatctccg 360
attaaccaag taaaggaagg gaatcaagga gataaaagca tgtcgaactg gtactggctg 420
tatcagccga catcgtatca aattggcaac cgttacttag gtactgaaca agaattttaa 480
gaaatgtgtg cagccgctga agaatatggc ataaagggtca ttgttgacgc gcggcccgcg 540
atctaaatta tactagctgt gtctgctgtg ctcttgctg ttttgcggt tcaaccatat 600
ttttcaatgc tgcaaccgtt tcttcctgct gtcttgTTTT caatccgcag tctggattta 660
cccagaagcg gtcagtcgga cagacggcaa gcgcatcaac gataatattg tacatttctt 720
cagttgacgg cacacgaggg ctgtgaatgt catatacacc aaggccaagc cttttcaaat 780
acgggtgggt ttttaagtaa tctaaaaatc ctccgtgggt tctgctatgt tcgattgtaa 840
tcacatcggc atcaagatca ttgattgtat caacgatatc ttcgaagttg ctgtagcaca 900
tatgtgtatg aatttgtgtc tcgtttttca cggaagaagt ggTTaatctg aaagcttctg 960
ccgccaagt caaatactca tcccaatcgc gggTTTTcaa tggaaggcct tcacgcagcg 1020
ctggttcacg gacttgaatg atttgaatgc ctgcgtcttc aagcgcttta acttctttgc 1080
gaagggcaag cccgatttgg aaggcgattt ctttcctcga gatgtcgttt cgagggaaaag 1140
accagtttaa gattgtaacc gggcccgtca gcattccttt cacatgcttg gaagtcaatg 1200
actgtgcgta gactgtgtct ttactgtca tcggttcaat aaattcaaca tctccgtaaa 1260
tgactggcgg gcggacacag cgtgagccgt atgattgaac ccaggcatat ttagtgaagg 1320
cgaaaccggc cagcttttca ccgaagtatt cgaccatgtc tgtccgttca aattcgccgt 1380
gaacaaggac atcaagctcc aattcttcct gaatatcaat ccattctttt gtttccgcat 1440
tgataaagtt ttgatactgt tcatcggacc actcagcttt ccgccatttt tggcgtgccc 1500
tccgcacttc agcagactgc ggggaagctgc cgatcgttgt cgtcggcaaa agcggaaggc 1560
cgagagattc attttgtagg gctaaacgtt cttcaaacgg aatcgggctg ttgaagtctt 1620
tatcagttaa ttgctcaagc tctttctttt gttcagaatt ggcgcctgtt gcaaactgtt 1680

01 SQ Listing- Oct 2004.ST25.txt

taagcgctg	gatatacagcc	ttagcctgct	gaatctcttc	gctgatcgcc	gcttttcctg	1740
atactaagcc	ttctttcaaa	gctgtcagct	cggccagctt	ttcttttgcg	taggataatc	1800
cgttcaatag	gtctttttcc	aaatgctcat	cagggtgttt	cgctactgga	acatcgagca	1860
ggctgctgga	aggctgaatc	cacagttcat	caacttttgc	aatgctgaga	acatcaagaa	1920
cggcatcgag	actctcttca	aggctcgctt	tccaaatggt	gcgtccgtcg	ataacgccgg	1980
ctgccagcac	tttatctgtc	gggaagccat	gtgttttaag	ctgttccagg	tttctgcctt	2040
tgctgtgaac	gaaatcaagg	ccaattccct	gaaccgggta	agagatcagc	tcttcataag	2100
catcaacaga	atcaaaatac	gtctgcaaaa	gcacattcaa	ggatgaaagc	tcacttgtaa	2160
tgctttcaaa	taattctttt	gcgccgcgta	catcttcact	agaggcggta	acgagcgccg	2220
gctcatcgat	ttgaacccat	tttacgcctt	cttcttcaag	ctctttcaaa	agctgtacat	2280
ataatggcac	aaggcgtttt	tggatcgctt	ttgcttcaga	cggttcatag	cctttagcaa	2340
gcgtaacgaa	cgtataaggg	ccgacaatca	caggctttgt	ttccacaccg	tattcctggt	2400
tgatccggcg	ataatcttcg	agttgtttgt	ttcttgtcag	acggaactca	atgctctcgt	2460
catattccgg	aacgatgtaa	tggtaatgtg	tattaaacca	ttttgtcatt	tcactagata	2520
cagcgtcttt	gattccgcgg	gcgatagcga	agtatgtatc	ggtagcgtca	gtcaaatgtc	2580
tgaaccgttt	cgggatccag	ttgaagctga	ctgctgtgtc	gagtacatgg	tcatactgtg	2640
tgaaatcaga	aacaggcaca	acatcaatct	gctgggtcaat	ttgtgttttt	actgcgata	2700
aaaatagttc	gtcgatttgc	ttcaaaaacg	tatctttatc	agtactgcct	ttccaatacg	2760
cttcaagtgc	ttttttccat	tcccggttca	ggtcgattct	cggaaatcct	aaattcgatg	2820
ttttgatggt	tgatcattgt	tctctccag	atccgtcgac	ctgcataaac	tgcatccctt	2880
aacttgtttt	atttgatatag	ttcatccatg	ccatgtgtaa	tcccagcagc	tgttacaaac	2940
tcaagaagga	tcatgtgatc	tctcttttcg	ttgggatctt	tggaaagggc	agattgcgtg	3000
gacaggtaat	ggttgctctg	taaaaggaca	gggccatcgc	caattggagt	attttgttga	3060
taatggctctg	ctaattgaac	gcttccatct	ttaatgttgt	gtctaatttt	gaagttaact	3120
ttgatgccat	tctttgggtt	gtctgccatg	atgtatacat	tatgtgagtt	ataattgtat	3180
tccattttgt	gtccaagaat	gtttccatct	tctttaaaat	caataccttt	taactcgatt	3240
ctattaacaa	gggtatcacc	ttcaaacttg	acttcagcac	gtgtcttgta	gttcccgtca	3300
tctttgtaaa	atatagttct	ttcctgtaca	taaccttcgg	gcatggcact	cttgaaaaag	3360
tcatgctggt	tcatatgatc	tgggtatcta	gaaaagcatt	gaacaccata	agagagagta	3420
gtgacaagcg	ttggccatgg	aacaggtagc	ttcccagtag	tgcaaataaa	tttaagggtta	3480
agttttccgt	atgttgcatc	accttcaccc	tctccactaa	cagagaattt	ttgccccatta	3540
acatcgccat	ctaattcaac	aagaattggg	acaactccag	tgaaaagtgc	ttctccttta	3600
ctcataaagc	ttccctccta	gcttttattc	aatatcattt	acatatcata	ctaaaattaa	3660
aggctaaagg	gaaacgatgt	ctaacgaaaa	aaaggccaaa	tcatgtttgg	cctttggcgg	3720

01 SQ Listing- Oct 2004.ST25.txt

ttatttcgat	gattgtcccg	aattctggcc	cttaaggcca	attctcatgt	ttgacagctt	3780
atcatcggca	atagttaccc	ttattatcaa	gataagaaag	aaaaggattt	ttcgctacgc	3840
tcaaatcctt	taaaaaaaca	caaaagacca	cattttttta	tgtggtcttt	attcttcaac	3900
taaagcacc	attagttcaa	caaacgaaaa	ttggataaag	tgggatattt	ttaaaatata	3960
tatttatgtt	acagtaatat	tgacttttaa	aaaaggattg	attctaata	agaaagcaga	4020
caagtaagcc	tcctaaattc	acttttagata	aaaatttagg	aggcatatca	aatgaacttt	4080
aataaaattg	atttagacaa	ttggaagaga	aaagagatat	ttaatcatta	tttgaaccaa	4140
caaacgactt	ttagtataac	cacagaaatt	gatatttagt	ttttataccg	aaacataaaa	4200
caagaaggat	ataaatttta	ccctgcattt	attttcttag	tgacaagggt	gataaactca	4260
aatacagctt	ttagaactgg	ttacaatagc	gacggagagt	taggttattg	ggataagtta	4320
gagccacttt	atacaatttt	tgatggtgta	tctaaaacat	tctctggtat	ttggactcct	4380
gtaaagaatg	acttcaaaga	gttttatgat	ttataccttt	ctgatgtaga	gaaatataat	4440
ggttcgggga	aattgtttcc	caaaacacct	atacctgaaa	atgctttttc	tctttctatt	4500
attccatgga	cttcatttac	tgggtttaac	ttaaatatca	ataataatag	taattacctt	4560
ctaccatta	ttacagcagg	aaaattcatt	aataaaggta	attcaatata	tttaccgcta	4620
tctttacagg	tacatcattc	tgtttgtgat	ggttatcatg	caggattggt	tatgaactct	4680
attcaggaat	tgtcagatag	gcctaattgac	tggcttttat	aatatgagat	aatgccgact	4740
gtacttttta	cagtcgggtt	tctaattgtca	ctaacctgcc	ccgttagttg	aagaaggttt	4800
ttatattaca	gctccagatc	ctctacgccg	gacgcacgtg	ggccggcatc	accggcgcca	4860
caggtgcggt	tgctggcgcc	tatatcgccg	acatcaccga	tggggaagat	cgggctcgcc	4920
acttcgggct	catgagcgct	tgtttcggcg	tgggtatggt	ggcaggcccc	gtggccgggg	4980
gactgttggg	cgccatctcc	ttgcatgccc	agaaatttat	ccttaagctg	gattcaggaa	5040
gaggggcggt	tgacaggaag	ggggagnagg	catataatga	gatgagtact	gttaactggg	5100
caggatggat	ccccagcttg	ttgatacact	aatgctttta	tatagggaaa	aggtggtgaa	5160
ctactgtgga	agttactgac	gtaagattac	gggtcgaccg	ggaaaaccct	ggcgttaccc	5220
aacttaatcg	ccttgacgca	catccccctt	tcgccagctg	gcgtaatagc	gaagaggccc	5280
gcaccgatcg	cccttcccaa	cagttgcgca	gcctgaatgg	cgaatggcgc	tttgccgtgt	5340
ttccggcacc	agaagcggtg	ccggaaagct	ggctggagtg	cgatcttcct	gaggccgata	5400
ctgtcgtcgt	cccctcaaac	tggcagatgc	acggttacga	tgcgcccatc	tacaccaacg	5460
taacctatcc	cattacggtc	aatccgcctg	ttgttcccac	ggagaatccg	acgggttggt	5520
actcgctcac	atttaatggt	gatgaaagct	ggctacagga	aggccagacg	cgaattattt	5580
ttgatggcgt	taactcggcg	tttcatctgt	ggtgcaacgg	gcgctgggtc	ggttacggcc	5640
aggacagtcg	tttgccgtct	gaatttgacc	tgagcgcatt	tttacgcgcc	ggagaaaacc	5700
gcctcgcggt	gatggtgctg	cgctggagtg	acggcagtta	tctggaagat	caggatatgt	5760

01 SQ Listing- oct 2004.ST25.txt

ggcggatgag	cggcatttttc	cgtgacgtct	cgttgctgca	taaaccgact	acacaaatca	5820
gcgatttcca	tgttgccact	cgctttaatg	atgatttcag	ccgcgctgta	ctggaggctg	5880
aagttcagat	gtgcggcgag	ttgcgtgact	acctacgggt	aacagtttct	ttatggcagg	5940
gtgaaacgca	ggtcgccagc	ggcaccgcgc	ctttcggcgg	tgaaattatc	gatgagcgtg	6000
gtggttatgc	cgatcgctc	acactacgtc	tgaacgtcga	aaacccgaaa	ctgtggagcg	6060
ccgaaatccc	gaatctctat	cgtgcggttg	ttgaactgca	caccgccgac	ggcacgctga	6120
ttgaagcaga	agcctgcgat	gtcggtttcc	gcgagggtgcg	gattgaaaat	ggctctgctgc	6180
tgctgaacgg	caagccgttg	ctgatttcgag	gcgttaaccg	tcacgagcat	catcctctgc	6240
atggtcaggt	catggatgag	cagacgatgg	tgcaggatat	cctgctgatg	aagcagaaca	6300
actttaacgc	cgtgcgctgt	tcgcattatc	cgaaccatcc	gctgtggtac	acgctgtgcg	6360
accgctacgg	cctgtatgtg	gtggatgaag	ccaatattga	aaccacggc	atggtgccaa	6420
tgaatcgtct	gaccgatgat	ccgcgctggc	taccggcgat	gagcgaacgc	gtaacgcgaa	6480
tggtgcagcg	cgatcgtaat	cacccgagtg	tgatcatctg	gtcgtgggg	aatgaatcag	6540
gccacggcgc	taatcacgac	gcgctgtatc	gctggatcaa	atctgtcgat	ccttcccgcc	6600
cgggtgcagta	tgaaggcggc	ggagccgaca	ccacggccac	cgatattatt	tgcccgatgt	6660
acgcgcgcgt	ggatgaagac	cagcccttcc	cggctgtgcc	gaaatggtcc	atcaaaaaat	6720
ggctttcgct	acctggagag	acgcgcccgc	tgatcctttg	cgaatacgcc	cacgcgatgg	6780
gtaacagtct	tggcggtttc	gctaaatact	ggcaggcggt	tcgtcagtat	ccccgtttac	6840
agggcggcct	cgtctgggac	tgggtggatc	agtcgctgat	taaatatgat	gaaaacggca	6900
accgctggtc	ggcttacggc	ggtgattttg	gcgatacgcc	gaacgatcgc	cagttctgta	6960
tgaacggtct	ggtctttgcc	gaccgcacgc	cgcatccagc	gctgacggaa	gcaaaacacc	7020
agcagcagtt	tttccagttc	cgtttatccg	ggcaaaccat	cgaagtgacc	agcgaatacc	7080
tgttccgtca	tagcgataac	gagctcctgc	actggatggt	ggcgtggat	ggtaagccgc	7140
tggcaagcgg	tgaagtgcct	ctggatgtcg	ctccacaagg	taaacagttg	attgaactgc	7200
ctgaactacc	gcagccggag	agcgccgggc	aactctggct	cacagtacgc	gtagtgaac	7260
cgaacgcgac	cgcattggtca	gaagccgggc	acatcagcgc	ctggcagcag	tggcgtctgg	7320
cggaaaacct	cagtgtgacg	ctccccgccg	cgtcccacgc	catcccgcat	ctgaccacca	7380
gcgaaatgga	tttttgcatc	gagctgggta	ataagcgttg	gcaatttaac	cgccagtcag	7440
gctttctttc	acagatgttg	attggcgata	aaaaacaact	gctgacgccg	ctgcgcgatc	7500
agttcacccg	tgcaccgctg	gataacgaca	ttggcgtaag	tgaagcgacc	cgcattgacc	7560
ctaacgcctg	ggtcgaacgc	tgggaaggcg	cgggccatta	ccaggccgaa	gcagcgttgt	7620
tgcagtgcac	ggcagataca	cttgctgatg	cgggtgctgat	tacgaccgct	cacgcgtggc	7680
agcatcaggg	gaaaacctta	tttatcagcc	ggaaaaccta	ccggattgat	ggtagtggtc	7740
aaatggcgat	taccgttgat	gttgaagtgg	cgagcgatac	accgcatccg	gcgcggattg	7800

01 SQ Listing- Oct 2004.ST25.txt

gcctgaactg	ccagctggcg	caggtagcag	agcgggtaaa	ctggctcgga	ttagggccgc	7860
aagaaaacta	tcccgaccgc	cttactgccg	cctgttttga	ccgctgggat	ctgccattgt	7920
cagacatgta	taccccgtac	gtcttcccgga	gcgaaaacgg	tctgcgctgc	gggacgcgcg	7980
aattgaatta	tggcccacac	cagtggcgcg	gcgacttcca	gttcaacatc	agccgctaca	8040
gtcaacagca	actgatggaa	accagccatc	gccatctgct	gcacgcggaa	gaaggcacat	8100
ggctgaatat	cgacggtttc	catatgggga	ttggtggcga	cgactcctgg	agcccgtcag	8160
tatcggcgga	attacagctg	agcgccgggtc	gtaccatta	ccagttgggtc	tggtgtcaaa	8220
aataagcatg	caccattcct	tgcggcgggcg	gtgctcaacg	gcctcaacct	actactgggc	8280
tgcttcctaa	tgcaggagtc	gcataaggga	gagcgtcgac	atggatgagc	gatgatgata	8340
tccgttttagg	ctgggcggtg	atagcttctc	gttcaggcag	tacgcctctt	ttcttttcca	8400
gacctgaggg	aggcggaat	ggtgtgaggt	tcccggggaa	aagccaaata	ggcgatcgcg	8460
ggagtgcctt	atttgaagat	caggctatca	ctgcggtcaa	tagatttcac	aatgtgatgg	8520
ctggacagcc	tgaggaactc	tcgaaccgga	atggaaacaa	ccagatattt	atgaatcagc	8580
gcggctcaca	tggcgttgtg	ctggcaaagt	caggttcatc	ctctgtctct	atcaatacgg	8640
caacaaaatt	gcctgatggc	aggtatgaca	ataaagctgg	agcgggttca	tttcaagtga	8700
acgatggtaa	actgacaggc	acgatcaatg	ccaggctctgt	agctgtgctt	tatcctgatg	8760
atattgcaaa	agcgctcat	gttttccttg	agaattacaa	aacagggtgta	acacattcct	8820
tcaatgatca	actgacgatt	accttgcggtg	cagatgcgaa	tacaacaaaa	gccgtttatc	8880
aatcaataa	tggaccagac	gacaggcggt	taaggatgga	gatcaattca	caatcgga	8940
aggagatcca	atttggcaaa	acatacacca	tcatgttaaa	aggaacgaac	agtgatgggtg	9000
taacgaggac	cgagaaatac	agttttgtta	aaagagatcc	agcgtcggcc	aaaaccatcg	9060
gctatcaaaa	tccgaatcat	tggagccagg	taaatgctta	tatctataaa	catgatggga	9120
gccgagtaat	tgaattgacc	ggatcttggc	ctggaaaacc	aatgactaaa	aatgcagacg	9180
gaatttacac	gctgacgctg	cctgcggaca	cggatacaac	caacgcaaaa	gtgattttta	9240
ataatggcag	cgcccaagtg	cccggtcaga	atcagcctgg	ctttgattac	gtgctaaatg	9300
gtttatataa	tgactcgggc	ttaagcggtt	ctcttcccca	ttgagggcaa	ggctagacgg	9360
gacttaccca	aagaaaccat	caatgatggt	ttcttttttg	ttcataaatc	agacaaaact	9420
tttctcttgc	aaaagtttgt	gaagtgttgc	acaatataaa	tgtgaaatac	ttcacaaaca	9480
aaaagacatc	aaagagaaac	ataccctgca	aggatgctga	tattgtctgc	atttgcgccg	9540
gagcaaacca	aaaacctggt	gagacacgcc	ttgaattagt	agaaaagaac	ttgaagattt	9600
tcaaaggcat	cgttagttaa	gtcatggcga	gcggatttga	cggcattttc	ttagtcggta	9660
acaatcctcg	ttaaaggaca	aggacctgag	cggaagtgtg	tcgtacagta	gacggagtat	9720
actagtatag	tctatagtcc	gtggaattat	tatatattatc	tccgacgata	ttctcatcag	9780
tgaaatccag	ctggagttct	ttagcaaatt	tttttattag	ctgaacttag	tattagtggg	9840

01 SQ Listing- Oct 2004.ST25.txt

```

gccgctgata attactaata ctaggagaag ttaataaata cgtaaccaac atgattaaca 9900
attattagag gtcacggttc aaaatggtat gcgttttgac acatccacta tatatccgtg 9960
tcgttctgtc cactcctgaa tcccattcca gaaattctct agcgattcca gaagtttctc 10020
agagtcggaa agttgaccag acattacgaa ctggcacaga tggtcataac ctgaaggaag 10080
atctgattgc ttaactgctt cagttaagac cgaagcgctc gtcgtataac agatgcgatg 10140
atgcagacca atcaacatgg cacctgccat tgctacctgt acagtcaagg atggtagaaa 10200
tgttgctcgt ccttgcacac gaatattacg ccatttgcct gcatattcaa acagctcttc 10260
tacgataagg gcacaaatcg catcgtggaa cgtttgggct tctaccgatt tagcagtttg 10320
atacactttc tctaagtatc cacctgaatc ataaatcggc aaaatagaga aaaattgacc 10380
atgtgtaagc ggccaatctg attccacctg agatgcataa tctagtagaa tctcttcgct 10440
atcaaaattc acttccacct tccactcacc ggttggtccat tcatggctga actctgcttc 10500
ctctgttgac atgacacaca tcatctcaat atccgaatag ggcccatcag tctgacgacc 10560
aagagagcca taaacaccaa tagccttaac atcatcccca tatttatcca atattcgttc 10620
cttaatttca tgaacaatct tcattctttc ttctctagtc attattattg gtccattcac 10680
tattctcatt cccttttcag ataattttag atttgctttt ctaaataaga atatttggag 10740
agcaccgttc ttattcagct attaataact cgtcttctta agcatcatgg tctcactttt 10800
ccactttttg tcttgtccac taaaaccctt gatttttcat ctgaataaat gctactatta 10860
ggacacataa tattaaaaga aacccccatc tatttagtta ttgttttagt cacttataac 10920
tttaacagat ggggtttttc tgtgcaacca attttaaggg ttttcaatac tttaaaacac 10980
atacatacca acacttcaac gcacctttca gcaactaaaa taaaaatgac gttatttcta 11040
tatgtatcaa gataagaaaag aacaagttca aaaccatcaa aaaaagacac cttttcaggt 11100
gcttttttta ttttataaac tcattccctg atctcccat actcctcaa tccaaagcta 11160
tttagaaaga ttactatatc ctcaaacagg cggtaacggg cctcttcacg gggaatgcgc 11220
gcgaccttca gcatcgccgg catgtcccc tggcgagcgg gaagtatcca gctcgagggtc 11280
gggcccgtt gctggcggtt ttccataggc tccgcccccc tgacgagcat cacaaaaatc 11340
gacgctcaag tcagaggtgg cgaaacccga caggactata aagataccag gcgtttcccc 11400
ctggaagctc cctcgtgcgc tctcctgttc cgacctgcc gcttaccgga tacctgtccg 11460
cctttctccc ttcgggaagc gtggcgcttt ctcatagctc acgctgtagg tatctcagtt 11520
cgggtgtaggt cgttcgctcc aagctgggct gtgtgcacga acccccgtt cagccccgacc 11580
gctgcgcctt atccggtaac tatcgtcttg agtccaaccc ggtaagacac gacttatcgc 11640
cactggcagc agccactggt aacaggatta gcagagcgag gtatgtaggc ggtgctacag 11700
agttcttgaa gtgggtggcct aactacggct acactagaag gacagtattt ggtatctgcg 11760
ctctgctgaa gccagttacc ttcggaaaaa gagttggtag ctcttgatcc ggcaaacaaa 11820
ccaccgctgg tagcgggtgg ttttttgttt gcaagcagca gattacgcgc agaaaaaaag 11880

```

01 SQ Listing- Oct 2004.ST25.txt

```

gatctcaaga agatcctttg atcttttcta cggggtctga cgctcagtgg aacgaaaact 11940
cacgttaagg gatttttggtc atgagattat caaaaaggat cttcacctag atccttttaa 12000
attaaaaatg aagttttaaa tcaatctaaa gtatatatga gtaaacttgg tctgacagtt 12060
accaatgctt aatcagttag gcacctatct cagcgatctg tctatttcgt tcatccatag 12120
ttgcctgact ccccgctctg tagataacta cgatacggga gggcttacca tctggcccca 12180
gtgctgcaat gataccgca gacccacgct caccggctcc agatttatca gcaataaacc 12240
agccagccgg aagggccgag cgcagaagtg gtcctgcaac tttatccgcc tccatccagt 12300
ctattaattg ttgccgggaa gctagagtaa gtagttcgcc agttaatagt ttgcgcaacg 12360
ttgttgccat tgctgcaggc atcgtggtgt cagctcgtc gtttggtatg gcttcattca 12420
gctccggttc ccaacgatca aggcgagtta catgatcccc catgttggtgc aaaaaagcgg 12480
ttagctcctt cggtcctccg atcgttgtca gaagtaagtt ggccgcagtg ttatcactca 12540
tggttatggc agcactgcat aattctctta ctgtcatgcc atccgtaaga tgcttttctg 12600
tgactggtga gtactcaacc aagtcattct gagaatagtg tatgcggcga ccgagttgct 12660
cttgcccggc gtcaacacgg gataataccg cgccacatag cagaacttta aaagtgtca 12720
tcattggaaa acgttcttcg gggcgaaaac tctcaaggat cttaccgctg ttgagatcca 12780
gttcgatgta acccactcgt gcacccaact gatcttcagc atcttttact ttcaccagcg 12840
tttctgggtg agcaaaaaca ggaaggcaaa atgccgcaaa aaaggggaata agggcgacac 12900
ggaaatgttg aatactcata ctcttccttt ttcaatatta ttgaagcatt tatcagggtt 12960
attgtctcat gagcggatac atatttgaat gtatttagaa aaataaacia ataggggttc 13020
cgcgcacatt tccccgaaaa gtgccacctg acgtctaaga aaccattatt atcatgacat 13080
taacctataa aaataggcgt atcacgaggc cctttcgtct tcaagaatt 13129

```

<210> 9
 <211> 87
 <212> DNA
 <213> artificial sequence

<220>
 <223> Promoter PR30

```

<400> 9
gaattcatgc atcgcgaggg tgagatttga cactagtagg ctacgggact ataatgcggg 60
aagtactgtt aactgcagga taagctt 87

```

<210> 10
 <211> 86
 <212> DNA
 <213> artificial sequence

<220>
 <223> Promoter PR43

```

<400> 10
gaattcatgc attcgaattt ggaaatcgac aggagcgggc gggtagggtg taatatatgt 60

```

01 SQ Listing- Oct 2004.ST25.txt

agtactgtta actgcaggat aagctt 86

 <210> 11
 <211> 87
 <212> DNA
 <213> artificial sequence

 <220>
 <223> Promoter PR119

 <400> 11
 gaattcatgc atcgagcgga agtttgttga cacagctcca ggatacaaataaataatgggtc 60
 gagtactgtt aactgcagga taagctt 87

 <210> 12
 <211> 86
 <212> DNA
 <213> artificial sequence

 <220>
 <223> Promoter PR164

 <400> 12
 gaattcatgc atggacagtt cgtctttgac aaatctaaga aagggaacta taatgtgggc 60
 agtactgtta actgcaggat aagctt 86

 <210> 13
 <211> 87
 <212> DNA
 <213> artificial sequence

 <220>
 <223> Promoter PR342

 <400> 13
 gaattcatgc atgcggatgg aaggggttga caccggcgcc ggggccaggt ataattctga 60
 cagtactgtt aactgcagga taagctt 87

 <210> 14
 <211> 87
 <212> DNA
 <213> artificial sequence

 <220>
 <223> Promoter PR409

 <400> 14
 gaattcatgc atagaggagt ttattcttga caaatgcgag gcagaatggt ataatacgta 60
 gagtactgtt aactgcagga taagctt 87

 <210> 15
 <211> 87
 <212> DNA
 <213> artificial sequence

 <220>
 <223> Promoter PR519

```

<400> 15
gaattcatgc atagtaaagt ttattcttga caagaattgg cgcggggtgat ataataaata 60
cagtactgtt aactgcagga taagctt 87

```

```
<210> 16
<211> 2591
<212> DNA
<213> Bacillus subtilis
```

```
<220>
<221> CDS
<222> (997)..(2199)
<223> MetE coding sequence
```

<400>	16																
ggatccgctt	tgaaatg	cgg	agcagaaaga	atggtgaacg	gctgctcaac	tgttttctta	60										
tcatttcctt	ccggacggat	aaacagctgc	cgcgcaaata	aattgtgcca	tgcgaaactca	120											
tttacgacag	tgatcggcag	cctgtatttc	tcgtctgctc	cggcaaatcc	ttcgaaaaca	180											
aacagttcat	ctcgctcctt	taaatagctg	acaactttcg	tgtacagccg	ctcaaacgct	240											
tcttctgaaa	tcggctgatt	caccgggccc	caatcgatct	tatttttcgt	gctttcttcc	300											
tccacgatga	atttatcttt	aggtgagcgt	cctgtgtaag	cgctgttgt	cgcgcaaca	360											
gcacctgtgg	atgttaaaat	gccttcgttt	cgggagagga	ctttttctgt	tagctgtgct	420											
gctgataaat	tatgacgcac	atttgacat	gttaataagg	cttgtgaatc	agcgggtcaa	480											
tcaactgagt	tcatatgaaa	ccttccttta	tcgttttttg	tgttttgcta	attgtgaatt	540											
agtataacat	atattttcaa	atagtctata	ctattttattg	ttttttgtgt	gtgcatttcc	600											
attgttttcc	ctcaatatag	gtgcctattt	cttctgaatc	atattgacat	tgcaaaccct	660											
tttacgataa	gatatttcat	tgagcggata	ctcttatccc	gagctggcgg	agggacaggc	720											
cctatgaagc	ccagcaaccg	gtttctctgt	tattttattat	gttcaattga	gtgagacaac	780											
caaggtgcta	acctgttgca	aggttgatatg	attccttgag	cgataagagt	gaaaggcaca	840											
aagaccaaac	cctttcctcg	atggaaaagg	tttttttatt	tcataaatat	gccaattaac	900											
attctcta	ataactgtac	attgtataag	agggagc	gag	ttccgtatca	tatatacaag	960										
gtcttttcggg	aggccttg	tg	caggaggaag	caaatc	atg	agt	aaa	aat	cgt	cgt	1014						
					Met	Ser	Lys	Asn	Arg	Arg							
					1				5								
tta	ttt	aca	tca	gaa	tct	gtt	acg	gag	ggg	cat	ccg	gat	aaa	atc	tgt	1062	
Leu	Phe	Thr	Ser	Glu	Ser	Val	Thr	Glu	Gly	His	Pro	Asp	Lys	Ile	Cys		
			10					15					20				
gac	cag	att	tat	gac	agc	att	tta	gat	gaa	att	tta	aag	aaa	gac	cct	1110	
Asp	Gln	Ile	Tyr	Asp	Ser	Ile	Leu	Asp	Glu	Ile	Leu	Lys	Lys	Asp	Pro		
		25					30					35					
aac	gcg	cgt	gtt	gct	tgt	gaa	aca	tct	gtg	aca	aca	ggt	ttg	gtt	ctt	1158	
Asn	Ala	Arg	Val	Ala	Cys	Glu	Thr	Ser	Val	Thr	Thr	Gly	Leu	Val	Leu		
	40					45					50						
gta	agc	gga	gag	atc	aca	act	tct	acg	tat	gtt	gac	att	ccg	aaa	acg	1206	
Val	Ser	Gly	Glu	Ile	Thr	Thr	Ser	Thr	Tyr	Val	Asp	Ile	Pro	Lys	Thr		

55 60 01 SQ Listing- Oct 2004.ST25.txt 65 70

gtt	cg	caa	acc	att	aaa	gaa	atc	gga	tac	aca	cg	gca	aaa	tac	gga	1254
Val	Arg	Gln	Thr	Ile	Lys	Glu	Ile	Gly	Tyr	Thr	Arg	Ala	Lys	Tyr	Gly	
				75					80					85		
ttt	gat	gcg	gaa	act	tgt	gcg	ggt	tta	aca	tca	att	gat	gag	cag	tct	1302
Phe	Asp	Ala	Glu	Thr	Cys	Ala	Val	Leu	Thr	Ser	Ile	Asp	Glu	Gln	Ser	
			90					95					100			
gct	gat	atc	gcg	atg	ggc	gta	gac	cca	gcg	ctt	gaa	gcc	cg	gaa	ggc	1350
Ala	Asp	Ile	Ala	Met	Gly	Val	Asp	Pro	Ala	Leu	Glu	Ala	Arg	Glu	Gly	
		105				110						115				
aca	atg	agc	gac	gaa	gaa	att	gaa	gcg	att	ggt	gcg	ggt	gac	caa	gga	1398
Thr	Met	Ser	Asp	Glu	Glu	Ile	Glu	Ala	Ile	Gly	Ala	Gly	Asp	Gln	Gly	
	120					125					130					
tta	atg	ttc	ggt	tat	gtg	tgc	aac	gaa	acg	aaa	gag	ctt	atg	cct	ctt	1446
Leu	Met	Phe	Gly	Tyr	Val	Cys	Asn	Glu	Thr	Lys	Glu	Leu	Met	Pro	Leu	
135					140					145					150	
cca	att	tca	ctt	gcc	cat	aaa	tta	gcc	cg	cg	cta	agt	gaa	gtc	cg	1494
Pro	Ile	Ser	Leu	Ala	His	Lys	Leu	Ala	Arg	Arg	Leu	Ser	Glu	Val	Arg	
				155					160					165		
aaa	gaa	gat	att	ctt	ccg	tac	ctt	cg	cct	gac	ggc	aaa	aca	cag	gta	1542
Lys	Glu	Asp	Ile	Leu	Pro	Tyr	Leu	Arg	Pro	Asp	Gly	Lys	Thr	Gln	Val	
			170					175					180			
acg	gtt	gag	tac	gat	gaa	aat	aac	aaa	cca	gtc	cg	att	gac	gcg	att	1590
Thr	Val	Glu	Tyr	Asp	Glu	Asn	Asn	Lys	Pro	Val	Arg	Ile	Asp	Ala	Ile	
		185					190					195				
gtt	att	tca	act	cag	cat	cac	cct	gaa	att	aca	ctt	gag	caa	att	cag	1638
Val	Ile	Ser	Thr	Gln	His	His	Pro	Glu	Ile	Thr	Leu	Glu	Gln	Ile	Gln	
	200				205						210					
cg	aac	att	aaa	gaa	cat	gta	atc	aat	ccg	gtt	gtt	cct	gaa	gag	ctg	1686
Arg	Asn	Ile	Lys	Glu	His	Val	Ile	Asn	Pro	Val	Val	Pro	Glu	Glu	Leu	
215					220					225					230	
att	gat	gaa	gaa	aca	aaa	tat	ttc	atc	aac	cct	aca	gga	cg	ttc	gta	1734
Ile	Asp	Glu	Glu	Thr	Lys	Tyr	Phe	Ile	Asn	Pro	Thr	Gly	Arg	Phe	Val	
				235					240					245		
atc	gga	ggc	cct	caa	ggg	gat	gcg	gga	ctt	aca	gga	cg	aaa	atc	atc	1782
Ile	Gly	Gly	Pro	Gln	Gly	Asp	Ala	Gly	Leu	Thr	Gly	Arg	Lys	Ile	Ile	
			250					255					260			
gtt	gat	acg	tac	ggc	ggc	tat	gca	cg	cac	ggc	gga	ggc	gcg	ttc	tca	1830
Val	Asp	Thr	Tyr	Gly	Gly	Tyr	Ala	Arg	His	Gly	Gly	Gly	Ala	Phe	Ser	
		265					270					275				
ggt	aag	gac	gcg	acg	aag	gta	gac	cg	tct	gca	gct	tat	gcg	gca	aga	1878
Gly	Lys	Asp	Ala	Thr	Lys	Val	Asp	Arg	Ser	Ala	Ala	Tyr	Ala	Ala	Arg	
	280					285					290					
tac	gtt	gcg	aaa	aac	atc	gtt	gcg	gct	gag	ctt	gct	gat	tct	tgc	gaa	1926
Tyr	Val	Ala	Lys	Asn	Ile	Val	Ala	Ala	Glu	Leu	Ala	Asp	Ser	Cys	Glu	
295					300					305					310	
gta	cag	ctt	gct	tac	gcg	atc	ggt	gtt	gca	cag	cct	gtg	tca	atc	tca	1974
Val	Gln	Leu	Ala	Tyr	Ala	Ile	Gly	Val	Ala	Gln	Pro	Val	Ser	Ile	Ser	
				315					320					325		
atc	aac	aca	ttc	ggt	tca	gga	aaa	gct	tct	gag	gaa	aaa	ctg	att	gaa	2022
Ile	Asn	Thr	Phe	Gly	Ser	Gly	Lys	Ala	Ser	Glu	Glu	Lys	Leu	Ile	Glu	

01 SQ Listing- Oct 2004.ST25.txt

```

330
335
340
gtt gtt cgc aat aac ttt gat tta cga cct gcc ggc att atc aaa atg 2070
Val Val Arg Asn Asn Phe Asp Leu Arg Pro Ala Gly Ile Ile Lys Met
345 350 355

ctt gat ttg cgc cgt ccg atc tat aaa caa act gct gcg tac ggc cac 2118
Leu Asp Leu Arg Arg Pro Ile Tyr Lys Gln Thr Ala Ala Tyr Gly His
360 365 370

ttt gga cgt cac gat gtt gac ctt cca tgg gag cgc aca gac aaa gcg 2166
Phe Gly Arg His Asp Val Asp Leu Pro Trp Glu Arg Thr Asp Lys Ala
375 380 385 390

gag cag ctg cgt aaa gaa gcg tta gga gaa taa ttttatagcc gcttactggt 2219
Glu Gln Leu Arg Lys Glu Ala Leu Gly Glu
395 400

taagcggcctt tccctttttt atcgttgtat tcatgtttat ttttttacat aactgcgaaa 2279

ccaaatacta ttcacagcgt ctataaatag gggttcaatg atgacaattt taattatgga 2339

ggcaatacta tgtgtggatt tgtcgggggtt ttttaacaagc atccgttagc tcaaaccgct 2399

gatcaagaag aactaatcaa acaaatgaac caaatgatcg ttcaccgcgg tcctgacagt 2459

gatggatatt tccatgatga gcacgtcggc ttcggattca gacggctcag cattattgat 2519

gtagaaaatg gtggacagcc tttatcatat gaagatgaaa catattggat tatctttaac 2579

ggagtaaatc ta 2591

<210> 17
<211> 400
<212> PRT
<213> Bacillus subtilis

<400> 17

Met Ser Lys Asn Arg Arg Leu Phe Thr Ser Glu Ser Val Thr Glu Gly
1 5 10 15

His Pro Asp Lys Ile Cys Asp Gln Ile Tyr Asp Ser Ile Leu Asp Glu
20 25 30

Ile Leu Lys Lys Asp Pro Asn Ala Arg Val Ala Cys Glu Thr Ser Val
35 40 45

Thr Thr Gly Leu Val Leu Val Ser Gly Glu Ile Thr Thr Ser Thr Tyr
50 55 60

Val Asp Ile Pro Lys Thr Val Arg Gln Thr Ile Lys Glu Ile Gly Tyr
65 70 75 80

Thr Arg Ala Lys Tyr Gly Phe Asp Ala Glu Thr Cys Ala Val Leu Thr
85 90 95

Ser Ile Asp Glu Gln Ser Ala Asp Ile Ala Met Gly Val Asp Pro Ala
100 105 110

```


01 SQ Listing- Oct 2004.ST25.txt

Leu Glu Ala Arg Glu Gly Thr Met Ser Asp Glu Glu Ile Glu Ala Ile
 115 120 125
 Gly Ala Gly Asp Gln Gly Leu Met Phe Gly Tyr Val Cys Asn Glu Thr
 130 135 140
 Lys Glu Leu Met Pro Leu Pro Ile Ser Leu Ala His Lys Leu Ala Arg
 145 150 155 160
 Arg Leu Ser Glu Val Arg Lys Glu Asp Ile Leu Pro Tyr Leu Arg Pro
 165 170 175
 Asp Gly Lys Thr Gln Val Thr Val Glu Tyr Asp Glu Asn Asn Lys Pro
 180 185 190
 Val Arg Ile Asp Ala Ile Val Ile Ser Thr Gln His His Pro Glu Ile
 195 200 205
 Thr Leu Glu Gln Ile Gln Arg Asn Ile Lys Glu His Val Ile Asn Pro
 210 215 220
 Val Val Pro Glu Glu Leu Ile Asp Glu Glu Thr Lys Tyr Phe Ile Asn
 225 230 235 240
 Pro Thr Gly Arg Phe Val Ile Gly Gly Pro Gln Gly Asp Ala Gly Leu
 245 250 255
 Thr Gly Arg Lys Ile Ile Val Asp Thr Tyr Gly Gly Tyr Ala Arg His
 260 265 270
 Gly Gly Gly Ala Phe Ser Gly Lys Asp Ala Thr Lys Val Asp Arg Ser
 275 280 285
 Ala Ala Tyr Ala Ala Arg Tyr Val Ala Lys Asn Ile Val Ala Ala Glu
 290 295 300
 Leu Ala Asp Ser Cys Glu Val Gln Leu Ala Tyr Ala Ile Gly Val Ala
 305 310 315 320
 Gln Pro Val Ser Ile Ser Ile Asn Thr Phe Gly Ser Gly Lys Ala Ser
 325 330 335
 Glu Glu Lys Leu Ile Glu Val Val Arg Asn Asn Phe Asp Leu Arg Pro
 340 345 350
 Ala Gly Ile Ile Lys Met Leu Asp Leu Arg Arg Pro Ile Tyr Lys Gln
 355 360 365
 Thr Ala Ala Tyr Gly His Phe Gly Arg His Asp Val Asp Leu Pro Trp
 370 375 380

01 SQ Listing- Oct 2004.ST25.txt
 Glu Arg Thr Asp Lys Ala Glu Gln Leu Arg Lys Glu Ala Leu Gly Glu
 385 390 395 400